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ARMY COMMUNICATOR

Voice of the Signal Regiment

Decisive Action Training Environments

Plus:

- *Innovation Day*
- *Cavalry Squadron Retransmission*
- *History of the Signal School*



Contents

3. Command Team

4. Cavalry Squadron Re- transmission Best Prac- tices

8. Planning & Targeting Cy- cle Integration

11. An Aviation Task Force in a Decisive Action Train- ing Environment

15. Innovation Day

17. History of the Signal School

The Army Communicator is published as a command information e-publication for the men and women of the United States Army Signal Corps under the provisions of AR 360-1.

Opinions expressed herein do not necessarily reflect the views of Office, Chief of Signal, the US Army or the Department of Defense.

Submit articles, photos, graphics, videos, story ideas, and nominations for “Signal Spotlight” to the editor [here](#). For additional information, please call (706) 791-7384.

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On the Cover

Tactical Command Post has the “fight” during an out of contact mission. Learn more on page 11 of this issue.

Photo by Spc. Michael Rogers



Chief of Signal Regimental Team

Welcome back to another edition of the Communicator. I hope everyone has remained safe and healthy. A lot has happened within the last month and it is important we stay calm but vigilant to protect ourselves and others. The Signal School has been working hard to not only continue to educate and train Soldiers but ensure we are taking the necessary precautions to keep our Soldiers safe.

The United States Army Signal School drives the rapid evolution of doctrine, organization, training, material, education, and leader development in all domains to provide the Army with multi-functional, multi-disciplined Signal Soldiers trained on relevant and reliable equipment in support of Large Scale Combat Operations. Our intent is to train multi-functional, multi-disciplined Signal Soldiers to become Leaders, Teammates, and Communicators that are capable and confident in mission requirements to deploy in Large Scale Combat Operations.

The Signal School, on average, trains 12,000 students annually here on Fort Gordon and another 8,000 at our extension campuses. We

teach 200 separate courses totaling 1,599 classes. This includes Active Duty, National Guard, and Reserve Soldiers. Our key tasks include 1) implementing training solutions that improve Army readiness, increase field training, practical applications, lab work, and integrate multi-domain large scale combat operations (MD-LSCO), 2) support home station training by leveraging regional signal training sites (RSTS), foundry facilities, mobile training teams, and LandWarNet, 3) leverage CCoE outreach Programs to improve workforce capabilities and enhance Soldier degree and certification opportunities, as well as 4) ensure training content is aligned with updated doctrine and MD-LSCO. We are able to get after these tasks by adhering to our three lines of effort which are optimizing the signal branch career fields, reshaping the signal force structure, and modernizing the training environment. The Signal School truly works for the regiment every single day. If you ever have any questions or concerns, please reach out. We would love to discuss the future of the regiment and always welcome your feedback.

We also want to see what you all are doing from your units to maintain and improve your expertise. If you'd like to submit comments, photos, or have an idea for an article to be featured in next month's edition, please contact us.



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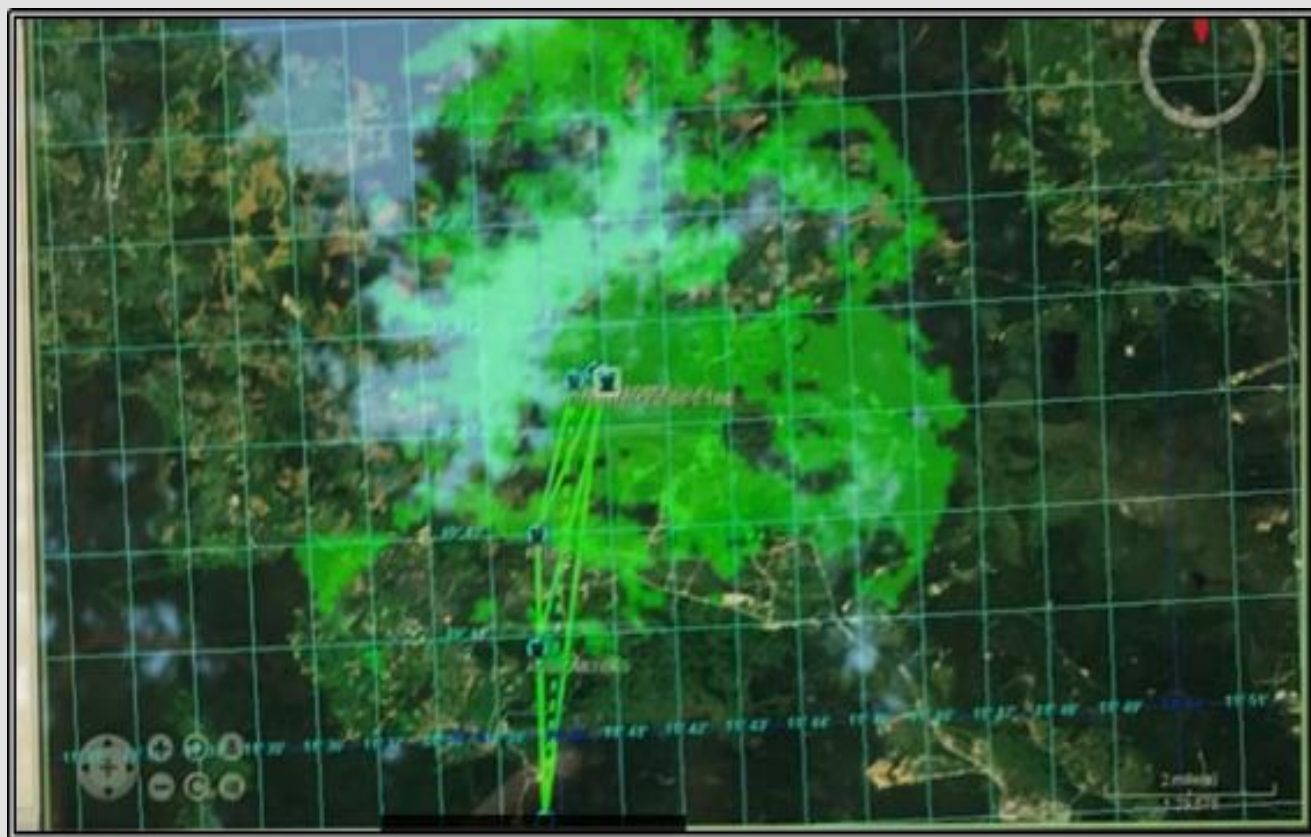
Cavalry Squadron Retransmission Best Practices

Cpt. Scott Drake
Signal Observer Coach/Trainer

Executing retransmission operations in a cavalry squadron can be quite challenging. By nature, scouts are the most forward units collecting critical information for the brigade. This information is vital as it provides the commander with the information needed to best array their forces on the battlefield. In order for scouts to report this information in a timely manner, reliable FM communications is required. The squadron Signal officer is responsible to ensure all troops have the ability to communicate with the tactical operations center in addition to the tactical command post during operations.

In order for the squadron Signal officer to execute successful retransmission operations, they must first execute detailed planning. During the military decision-making process, the Signal officer must clearly understand the squadron's scheme of maneuver down to the troop level. Special attention is paid to the distances

that subordinate units will be separated in addition to the type of terrain those units will maneuver. In order to locate viable retransmission locations with adequate line of sight the Signal officer will use the SPEED (Systems Planning, Engineering and Evaluation) software program. This program allows the Signal officer to plot potential retransmission locations by allowing the user to customize the type of radio, power settings, and antenna the unit is fielding. As a result, the Signal officer will be able to establish retransmission locations that provide the best line of sight to support all subordinate units. Signal officers that fail to utilize the software program in planning severely hinder their com-

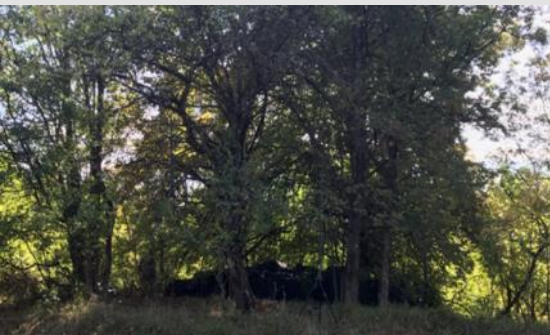


SPEED Program showing reliable FM coverage areas in green.

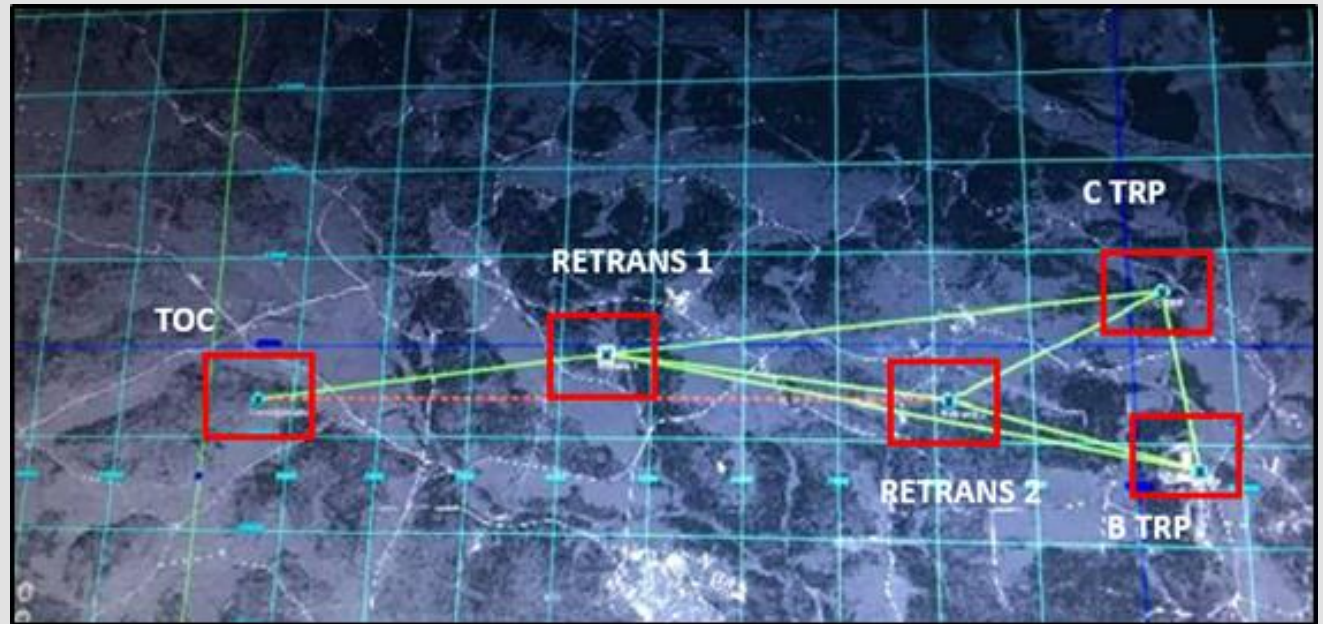
Photo provided by Cpt. Scott Drake

mander's ability to communicate to their subordinate elements.

During the planning process, the Signal officer must also be aware of all brigade retransmission locations and the frequencies supported. As a result, the Signal officer will ensure they do not co-locate their retransmission locations with brigades. Additionally, the Signal officer will also provide the brigade retransmission locations to the squadron commander as well as the troops in order to build a more detailed common operating picture. During the squadron combined arms rehearsal, the Signal officer briefs the primary, alternate, contingency, and emergency communications plan by phase or by trigger. The Signal



*Well-concealed RETRANSMISSION site.
Photo provided by Cpt. Scott Drake.*



Squadron retransmission locations and friendly units notated by the blue icons on SPEED. Solid green bars notate feasible FM communications between locations. Dashed green lines represent intermittent communications and red dashed lines are degraded.

Photo provided by Cpt. Scott Drake

officer will also brief the areas that certain maneuver elements may have degraded communications based on the software analysis conducted during the military decision making process. Lastly, the Signal officer must always consider the security of the retransmission team. If the team is unable to secure itself with the appropriate weapons systems, the Signal officer must request additional support from the squadron executive officer.

While the Signal officer is assessing potential retransmission locations, the retransmission team sergeant is conducting pre-combat checks and pre-combat inspections using a checklist to ensure the retransmission team has the necessary food, water, fuel, ammunition, and spare parts to execute successful operations.

Once the retransmission team has arrived at the planned location, the team will conduct a communications check to ensure the location is feasible for retransmission operations. Next, the team must camouflage the retransmission

vehicle and equipment. It is vital that the team provide hourly situation reports to the Signal officer back at the tactical operations center to maintain situational awareness. In addition, members of the retransmission team are required to pull security and observe and report enemy activity. Retransmission

teams are alone in concealed positions that allow them to observe enemy troop movements. Reporting enemy activity will provide vital information to the squadron commander, answer priority intelligence requirements, and allow the tactical operations center to create a more detailed common operating picture.

In order to execute successful retransmission operations, the Signal officer must be involved in the military decision-making process, work alongside the squadron planner to understand the squadron scheme of maneuver and use all digital tools available to locate potential retransmission locations. In addition, the retransmission team sergeant must ensure their Soldiers have the equipment and supplies available to conduct long-term operations.

<p>Retransmission Precombat Check/Precombat Inspection</p> <ul style="list-style-type: none"> o Weapons/Ammo/sensitive items inventory o Global Positioning System o Night observation devices tested o Simple key loader o Communications card o Maps, protractors, and compasses o Systems Planning Engineering and Evaluation Device (SPEED) assessment o PMCS on all equipment o Top off vehicles/fuel cans o Basic issue item is present o Complete combat lifesaver's bag o PMCS radios/Joint Capabilities Release /antennas o Batteries plan (spares for all equipment) o Cables installed o Hand microphones with spares o Speakers o Load retransmission (RETRANS), communications security (COMSEC) and frequencies o Radio check with adjacent/supported units o Load plan (Equipment that is used first is available) <ul style="list-style-type: none"> ➢ Personnel manifest ➢ Equipment manifest o 7-day supply of food and water o Camouflage netting layout o All items are secured/tied down/dummy cord 	<ul style="list-style-type: none"> o Recommended retransmission equipment: <ul style="list-style-type: none"> ➢ 6 complete antenna systems ➢ Tent/heater ➢ Extension cords ➢ Tool boxes ➢ PRM-34/PRM-36 ➢ Petroleum, oil, lubricants (POL) ➢ Boxes (2) Containing: <ul style="list-style-type: none"> • Spare cables • Spare ground cables • Trash bags • Connectors • Toilet paper • Tape (100mph/electrical) • Chemlights • Mechanical pencils • Binoculars • All applicable manuals • AN/PRC-119 complete <p>Pre-Mission Brief</p> <ul style="list-style-type: none"> o Commander's intent o Convoy/ramp brief o Primary, alternate, contingency, emergency (PACE) plan <ul style="list-style-type: none"> ➢ Frequencies ➢ COMSEC o Jamming plan o Supported unit's scheme of maneuver o Location and role of supporting units 	<ul style="list-style-type: none"> o Enemy Situation <ul style="list-style-type: none"> ➢ Primary enemy location - update daily ➢ Most likely enemy actions ➢ Tactics, techniques, and procedures against remote sites like RETRANS sites ➢ Primary and alternate avenues of approach ➢ If the enemy threat requires an escort, then identify escorting unit o Timeline of operations o Weather and terrain o Location of site <ul style="list-style-type: none"> ➢ Terrain masking technique - <u>Do not skyline yourself</u> ➢ Primary/alternate location - explain movement triggers ➢ Antenna placement plan - know where the enemy is in relation to the operation, and shield transmissions from the enemy o Site security/site defense plan - vital and continuous <ul style="list-style-type: none"> ➢ Supporting security elements ➢ Internal security plan ➢ Site concealment/camouflage ➢ Concertina wire ➢ Range card/Fires Plan o Compromise Plan <ul style="list-style-type: none"> ➢ Emergency destruction plan <ol style="list-style-type: none"> 1. COMSEC 2. Documents/maps 3. Equipment ➢ Escape and evasion plan o Resupply plan and reporting plan
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Retransmission Mission Checklist.

Provided by Cpt. Scott Drake

Planning, Targeting Cycle Integration

Lt. Col. David Pasquale,
Cpt. Jason Klemp, and
CW3 Jacob Land
52nd Signal Battalion, 2nd Signal
Brigade

The Department of Defense and the Army have acknowledged the importance of the domains beyond air, sea, and land - so too have our pacing threats. This emphasis is driving the requirement for innovation across the Department and throughout the Army. Further, the requirement for innovation extends to the tactical level. Here at the Joint Multinational Readiness Center (JMRC) in Hohenfels, Germany we provide Battalions (BN) and Brigade Combat Teams (BCT) the environment to utilize newly fielded cross-domain equipment against a world-class Opposing Force (OPFOR). It is through professional and informed dialogue that this tactical level innovation takes place.

With Russia's actions in Ukraine, Syria, Georgia, and Estonia informing the operational environment (OE) portrayed to



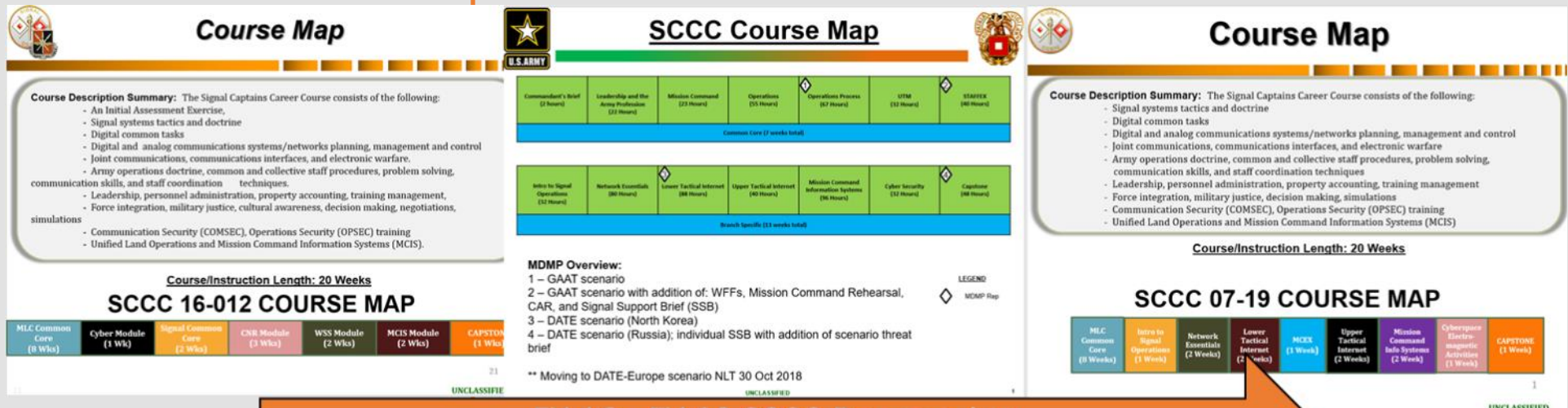
*BCT Conducting TWG during Combined Resolve XI, Joint Multinational Readiness Center, Hohenfels, Germany.
US Army photo*

the rotational unit (RTU) at JMRC, we provide a unique proving ground for commanders and staffs. ADRP 3-0 defines cyberspace electromagnetic activities (CEMA) as the process of planning, integrating, and synchronizing cyberspace and electronic warfare operations in support of unified land operations. Staffs must understand CEMA to inform the commander throughout the Military Deci-

sion Making Process (MDMP) and execution to operate effectively in the contested space of our multiple domain fight. With Ukraine as the most recent laboratory for Russia's lethal and non-lethal targeting, we replicate capabilities and techniques exhibited by the US Army Europe (USAREUR or U'R) pacing threat for the RTU. Similar to the beginning of the war in eastern Ukraine, we observe the RTU suffer from disruptive to lethal attacks tied to the lack of signature understanding at the individual Soldier and unit levels. This manifests itself from unreliable PACE plans, radar cueing, GPS

denial, and radio usage uninformed by OPFOR detection capability, and lack of targeting with CEMA.

For staffs to provide useful information to the commander they need to understand how the OPFOR views the RTU's capabilities in cyberspace and the electromagnetic spectrum. It is our recommendation that the staffs do this through a reverse multi-domain intelligence preparation of the battlefield (IPB). Once the staff identifies how the OPFOR exploits the RTU's critical vulnerabilities, they can develop courses of action (COA) designed to protect them or mitigate the OPFOR's ability to exploit them. The pacing threat's innovative CEMA targeting successes when coupled with artillery are lethal - documented in 2014 with the destruction of almost two Ukrainian mechanized battalions within minutes. OF1 We replicate this capability with our OPFOR, tell the RTU about it, and yet still see a lack of electromagnetic and cyber signature understanding – leading to qualitative and quantitative lethal effects for the OPFOR. This denied, degraded, and disrupted space operational environment (D3SOE) mirrors what the Alliance can expect to see from our pacing threat both pre-and-post-NATO Article Five. For staffs to develop COAs that protect their vulnerabilities whilst simultaneously exploiting those of our adversaries, they must be equipped with CEMA knowledge and provide options and analysis to the



commander. The increased understanding of their capabilities and requirements will feed the essential innovation to deter and defeat the pacing threat in a complex and multi-domain operational environment.

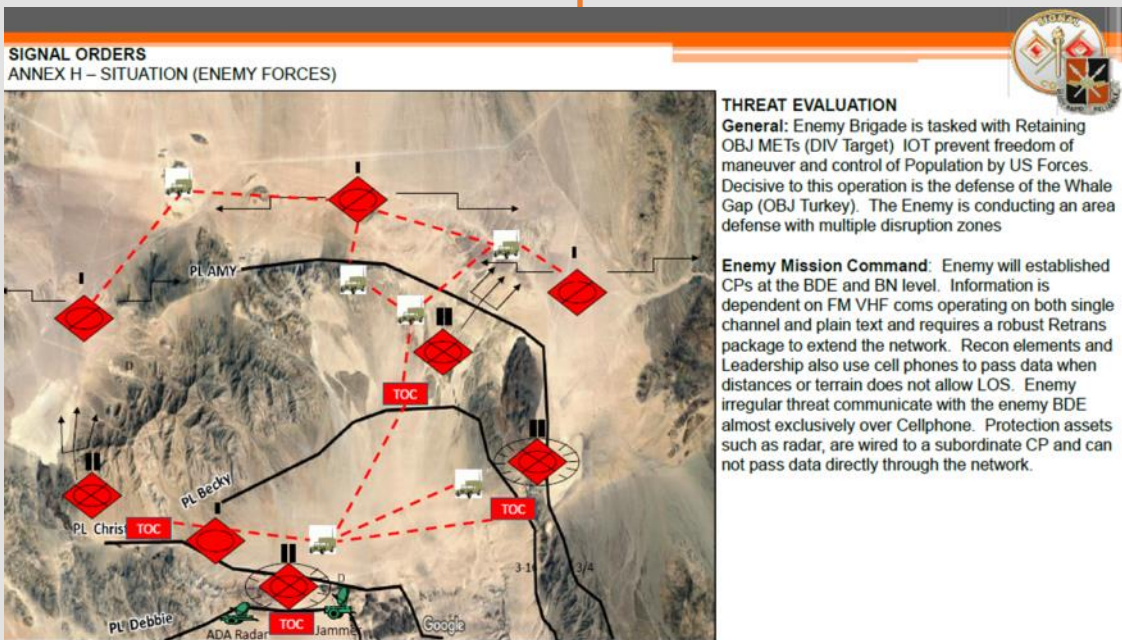
Signal Officers need to play a more significant role developing IPB, in conjunction with the BN spectrum manager, the BN Electronic Warfare (EW) Non-Commissioned Officer (NCO), and the BN Military Intelligence Officer1F2. This is to further develop the understanding of the enemy EW order of battle and

assess how enemy Mission Command (MC) nodes array themselves in the battle space. It is evident through observation, that a majority of BN S6s do not conduct this analysis to the breadth and depth necessary to facilitate the targeting process, the implementation of EW defensive counter measures, network defensive counter measures, nor the ability to understand the entire battle space in all domains.

Because of the lack of CEMA personnel at the BN level, the Signal Officer and S6 shop tend to have the burden placed on them to be the subject matter experts and influencers when it comes to CEMA operations. Signal NCOs and Officers are more than capable of this task with some additional training. In the past Signal Captain's career course (SCCC) only gave a one week general information brief on cyber security. Currently, Signal captains only receive a 32-hour block of instruction on CEMA during the SCCC2F3. The future projections of cyber security training towards a CEMA training model should focus on what are CEMA, define the Signal Corps role (tactical, operational, strategic), and provide the practical applicability of CEMA at the tactical level3F4. This training – and that done within the unit - will provide the expertise necessary to articu-

late associated risks to the unit commander about how enemy CEMA operations affect the tactical unit's mission. This improvement in training and personnel narrows the gap for enemy forces to exploit directly affecting maneuver forces.

A realignment of personnel on BN staffs is a potential solution - leveraging EW NCOs and Signal Soldiers to accomplish the goal of greater integration. EW NCOs placed within the Signal section of BN staffs rather than the current alignment in the BN operations section. This realignment postures Signal Officers and NCOs to provide greater influence and guidance during the MDMP and current operations. Further, this allows the EW NCO to provide profession expertise to the BN S6 section directly.



Example from Combined Information Dominance Support Brief.
US Army Graphic

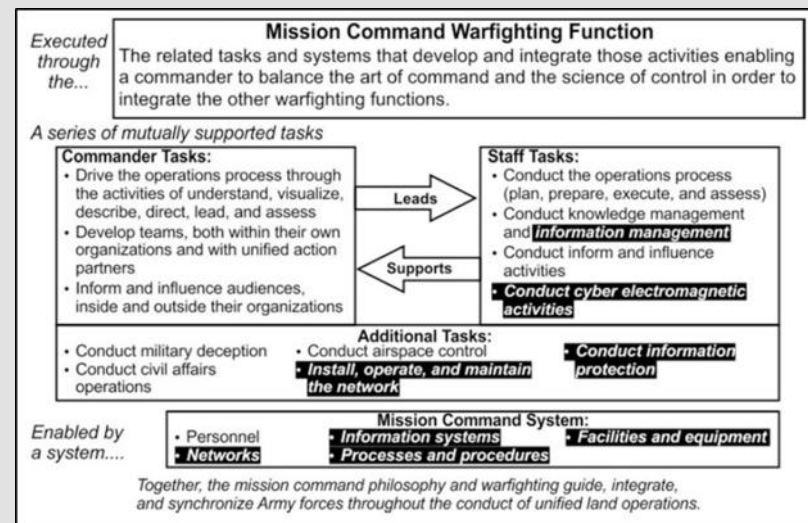
Upon the realignment of the EW NCO under the guidance of the S6, the S6 is more prepared to provide a robust CEMA and MC enemy threat template nested in the enemy's order of battle during Mission Analysis (MA) in conjunction with increased coordination and synchronization between Brigade (BDE) CEMA and the BN S24F5. This improved synchronization is the key to the improvement of Brigade lethal and nonlethal targeting of enemy command nodes and reducing enemy CEMA battlefield effects on Allied units. The implementation of this remedy will have little effect to current operations to resolve this problem set.

Addressing the delineation of defined outputs focused across domains during MA allows the tactical S6 to increase integration and refine inputs into course of action development and the nominations to the targeting process focusing on enemy MC nodes and lines of communication. To be effective, the maneuver S6 needs to focus planning efforts on the template enemy MC nodes at echelon within their given area of operation. Similar-

ly, the sustainment S6 needs to focus on the rear area of operations while a field artillery S6 needs to focus on the lines of communication from enemy observers in the friendly close and rear area of operations and the linkage to the adversary's delivery options in the brigade's deep area of operations. The accumulation of all of these outputs by the respective BN S6s in a BCT portrays a more robust enemy situation template nested within the enemy order of battle. These outputs feed and provide a more detailed assessment to the BN and BCT war gaming effort and targeting cycle.

The BDE S6 assists S2 with Target Value Analysis (TVA) to develop High Value Targets (HVTs) and High Value Target List (HVTL). Recommends High Payoff Target (HPT) for incorporation into commander's approved HTPL. The S6 should be an active participant during the unit's targeting working group and provide quality inputs that address enemy cyber and EW threats, and lines of communication vulnerabilities. The end state is to provide to synchronize detection and delivery assets to achieve the commander's intent and desired effect. The S6 plays a vital role of discovering targeting opportunities to allow the commander shape the enemy force.

Through self-reflection, a greater emphasis during SCCC on S6 Mission Analysis, and more instruction on how Signal, Military Intelligence, and CEMA interact during the planning process of BN and BCT operations units will have a more complete MA product leading into future planning. These three areas of emphasis have the ability to create more dexterous Signal Officers whilst strengthening the synchronization across multiple war fighting functions achieving tangible results that allow maneuver formations to increase their lethality on the modern battle field.



ADRP 6-0 Mission Command, published March 28, 2014.
US Army graphic

Perspective from an Aviation Task Force in a Decisive Action Training Environment

Cpt. Pepito A. Purugganan
2nd Squadron, 6th Cavalry Regiment,
25th Combat Aviation Brigade

Maintaining lines of communication with two higher headquarters and twelve lateral and subordinate units during National Training Center was a great challenge to our Task Force. In addition, enabling three Mission Command nodes with upper Tactical Internet (TI) connection throughout all phases of the operation also presented challenges that we had to overcome. Planning and properly equipping Soldiers to support mission requirements, and ensuring continuous upper Tactical Internet (TI) for the Tactical Operations Center (TOC) and Tactical Command Post (TAC) during Command Post (CP) jumps furthered our challenges.

During training, our squadron S2 learned that the Opposing Forces (OPFOR), recently updated their electronic warfare capabilities. The most significant of

these capabilities is their Frequency Modulation (FM) jamming system. This system is capable of jamming enemy radio communications within a 60 kilometer radius ranging from High Frequencies (HF) to Ultra High Frequencies. The OPFOR will generally leverage FM, Global Positioning System (GPS), and satellite communication jamming during critical points of an enemy's operation such as the seizure of a major urban center, air assault operations, and integrated attacks. Generally, the effects of FM, GPS, and JCR jamming will last between three to five hours.

Our Aviation Task Force was operationally controlled by the division with a Direct Support relationship to the Brigade Combat Team (BCT). This relationship translated to our Task Force not only supporting the BCT's boundaries, but also supporting those of the division. Our Task Force was required to maintain lines of communication that extended well beyond those of other task forces within the brigade. Given that, our Task Force was required to stay connected to both division and brigade continuously. A question we often asked ourselves was, "How do we enable three Mission Command nodes while staying



A Signal Soldier works on establishing TACSAT communication while another works on establishing Upper TI connection with the T2C2 Lite.

Photo by Cpt. Pepito Purugganan.

connected to the brigade, the division, lateral and subordinate units?” This question essentially built the foundation to our problem statement: How do we enable distributed Mission Command in a complex and contested environment without causing interruption and degradation to the Task Force?

First, we looked at what communication equipment was on hand against the required capabilities. Based on the ground and air tactical plan, we knew we had to coordinate additional equipment that would help us bridge the gap when communicating to both the division and the BCT during CP jumps and Mission Command handovers. According to our Modified Table of Organization and Equipment (MTOE), we were only authorized one retransmissions (RETRANS) team and one upper TI system in the squadron. This was a challenge because we anticipated that the BCT we were supporting would leverage FM, JCR, and upper TI connectivity. As a result, my team forecasted that we needed to support at least three nodes capable of upper TI connectivity and two

RETRANS teams. We cemented that idea after our Task Force Commander published his intent of ensuring there were no disruptions to both FM and upper TI connection throughout the rotation. Once our initial plan was finalized, we deployed to NTC with four upper TI systems; our organic Satellite Transportable Terminal (STT) and Command Post Node (CPN) package, Transportable Tactical Command Communications (T2C2) Lite and Heavy systems we received from the 25th Infantry Division, one SIPR and NIPR Access Point (SNAP) system that we coordinated through NTC’s G6, and two RETRANS teams.

After we determined what we had on hand, we organized ourselves for combat. First, my Noncommissioned Officer in Charge (NCOIC) reorganized our S6 shop into three support teams; TOC, TAC, and RETRANS teams. Second, we selected personnel for each team based on each individual’s strengths and weaknesses. My NCOIC charged our Combat Net Radio (CNR) section Sergeant to lead the TOC support team with the help of one Noncommissioned Officer (NCO) and two Junior Enlisted Soldiers. We challenged and selected two Junior Enlisted Soldiers to provide communication support to the TAC that included one T2C2 Lite for upper TI and numerous radio systems. Another CNR NCO was left in charge of two RETRANS teams. Then we assigned upper and lower TI equipment to the TOC and TAC support teams. The TOC’s package consisted of the STT/CPN package with the basic Mission Command systems such as Command Post of the Future (CPoF), Advanced Field Artillery



T2C2 Heavy and Lite in action on the rooftop of Los Alamitos’ Fiddler’s Green.

Photo by Cpt. Pepito Purugganan

Tactical Data System (AFADTDS), Distributed Common Ground System-Army (DCGS-A), and Secure Voice over Internet Protocol (SVoIP) systems. The SNAP terminal provided upper TI connectivity to our Unmanned Aerial System (UAS) platoon along with one CPoF and one SVoIP. We postured the T2C2 Heavy to provide redundant communication



TAC has the “fight” during an out of contact mission.

Photo by Spc. Michael Rogers

to both STT and SNAP should one of the systems goes down. The TAC was equipped with the T2C2 Lite which provided upper TI connectivity, one AFATDS, one CPoF, and two Soft VoIPs. Both the TOC and TAC were equipped with the basic lower TI packages such as FM, HF, TACSAT, JCR, and Iridium phones. Lastly, we assigned tasks and purposes to each team, and ensured each member understood their role and responsibilities. Our shop’s ability to anticipate additional capabilities and organize our team for combat was due to the shop’s knowledge of both the ground and air maneuver plan along with their strict adherence to the commander’s intent. These were the first and second valuable lessons we learned.

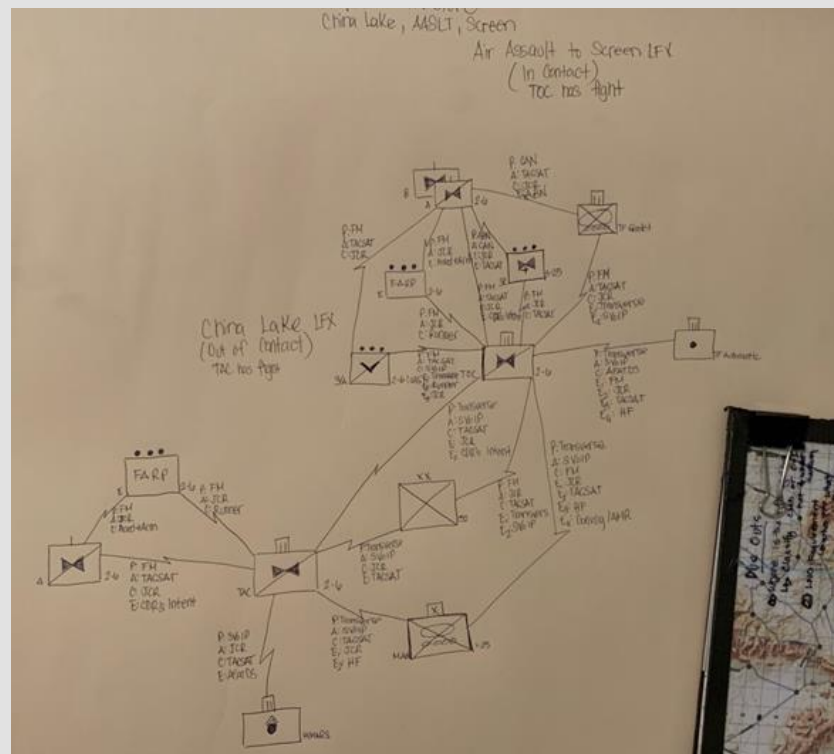
From then on, we took full advantage of every exercise we were a part of and we trained relentlessly. From September 2018 to January 2019, we conducted three iterations of Radio Telephone Operator (RTO) Academy, five Communication Exercises, six JCR Validation Exercises (VALEX), and practiced multiple iterations of Battle Handovers during TOC/TAC jumps. Specifically, the training we conducted at Los Alamitos, California set the conditions for our deployment to NTC 19-04 rotation. These were the results of the third essential lesson we experienced: identifying required training and conducting those trainings internally, within each staff sections and supported troops/companies.

Once completing our local training exercises, we applied our learned skills during the rotation. To further test our team’s capabilities, we decided to jump the TAC package in support of the Squadron Executive Officer’s efforts during the Reception, Staging, Onward Movement, and Integration (RSOI) Phase of our rotation. The result was instant upper TI and lower TI connections for the TAC within 30 minutes of arriving at NTC. Our TAC personnel carried that momentum throughout the rotation. For instance, the TAC support team made necessary adjustments to their techniques and procedures to further reduce setup time down to 18 minutes such as utilizing super whip antennas on the TAC vehicles, which was a combination of vehicle antenna parts and several parts of the OE-254 antenna system. Our operators also color coded and labeled each equipment based on the type of systems they were while stressing the importance of where each system needed to go during tear-down. Most notably, the T2C2 Lite operator used FM radio batteries to provide initial power to the T2C2 Lite, and later transitioned it to generator. These minor adjustments

decreased our set-up time tremendously and increased the Task Force's effectiveness during critical battles. Simultaneously, our RETRANS teams also served as observation posts for the BCT by reporting and engaging multiple enemy Hinds-D helicopters and Improvised Explosive Devices from their positions. These were the outcomes of forstering initiative and empowering subordinates to make sound and timely decisions at their level.

During periods of transition and jumps, we employed the TAC which consisted of four HMMWVs equipped with FM, JCR, Tactical Satellite, HF, One System Remote Video Terminal, and most importantly the T2C2-Lite which enabled continued beyond line-of-sight upper TI communications via transverse chat, CPoF, SVoIP, and AFATDS. The shortest of these jumps spanned 10 kilometers and the longest (China Lake) spanned over 88 kilometers. With the addition of upper TI connectivity in the TAC, it provided enhanced situational awareness while continuing to battle track flights and opera-

tions for accurate and timely reporting thus enabling the Task Force Commander to have a better common operational picture of the battlefield. Jumping without such equipment would heavily degrade situational awareness during critical phases of operations such as Mission Command Handovers, a task that is sometimes overlooked. To mitigate the issue, our shop developed a checklist where each of the RTOs, Battle Captains, and field grades conducted their own thorough and deliberate checks during the Handovers (See Figure 6). Our Task Force normally sequenced our transition either at the completion of a mission or two hours prior to the next mission execution to allow adequate time for troubleshooting. Being able to jump the TAC with both upper and lower TI connection impacted the Task Force's ability to maintain continuous lines of communication to both the division and the BCT, and therefore translated to seamless aviation support to both the division and the BCT. This was a unique challenge that Task Force ensured we did not overlook. The re-



2-6 CAV's Mission Command structure during an Out-of-Contact Attack, Air Assault, and Screen missions.
US Army photo

sult was continuous upper and lower TI connection during those transitions and minimal interruption to the operational tempo or planning. This was the result of providing a tested, robust and redundant communication Primary, Alternate, Contingency, and Emergency (most commonly known as PACE) plan. This was the fifth and the last vital lesson we learned during our rotation. In conclusion, our Task Force covered a vast area of land due to the brigade and division mission requirements.



Nicholas Spinelli
Office Chief of Signal

Fort Gordon held the first of its two annual Innovation Days at the Gordon Conference and Catering Center March 5.

According to the event organizer, National Conference Services, Inc., “the Fort Gordon Innovation Day connects government and industry to collaborate on mission requirements and technology solutions.”

The daylong serves as kind of a precursor to the annual Augusta TechNet, which like Innovation Day, will feature live demos and hands-on training for attendees.

“Innovation Day is an opportunity for industry to present unique new capability options while potentially creating a more realistic environment, than something as large as the Augusta TechNet,” said Dwayne Williams, Deputy Commandant of the US Army Signal School. “It provides an opportunity for our

Innovation Day brings latest advancements to Fort Gordon



More than 40 vendors set up exhibitions at the Fort Gordon Innovation Day.
Photo by Nicholas Spinelli

Instructors, Training Developers and Managers to experience industry products and have discussions about issues that could potentially change and enhance training and education with in the school.”

Innovation Day is typically held on Fort Gordon twice a year: once in the spring and again in the fall. Event sponsor-

ship alternates between the Signal and Cyber Schools, with vendors and presentations catered to the specific audience. For this most recent Innovation Day, more than 40 exhibitors set up booths or tables at the event, providing information and demonstrations on the latest communication products, services, and innovations available. Tech Talks on a variety of subjects were also held as part of the day’s activities. Speakers discussed Signal related topics such as Open Source Cloud Infrastructure, Support to Multi Domain Operations, and more.

The next major technological expo for the Fort Gordon community will be TechNet Augusta, scheduled for this summer, and will be followed by a Cyber focused Innovation Day later in the fall.



*Innovation Day is a bi-annual event on Fort Gordon, alternating between a Signal and a Cyber focus.
Photo by Nicholas Spinelli*



Steven J. Rauch
Signal Corps Branch Historian

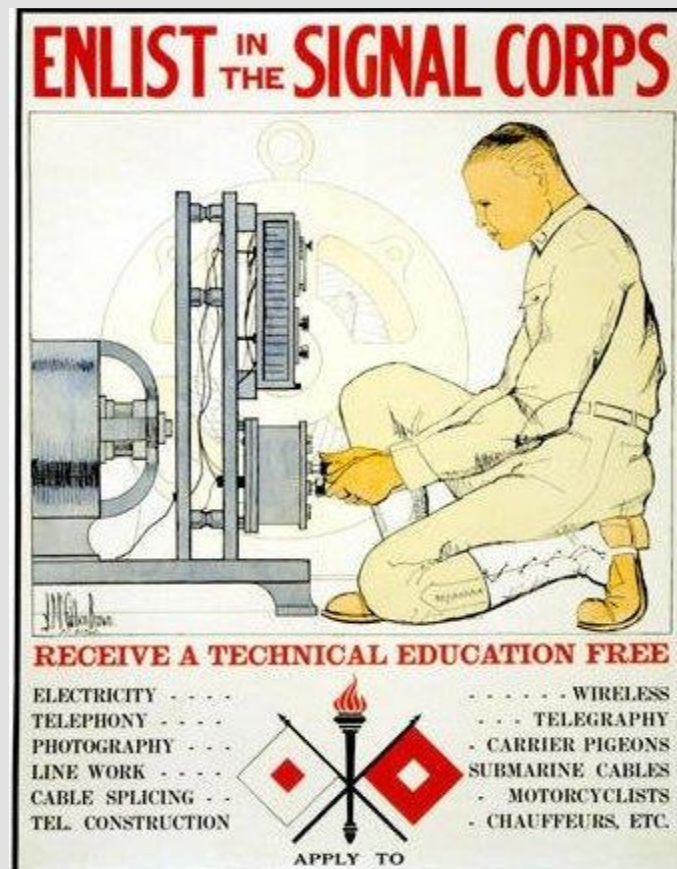
In 1859, the War Department provided Albert J. Myer the resources to test his proposed wig-wag visual signaling system. Myer and a few assistants arrived at Fort Monroe, Virginia in April to determine the best design for the equipment and associated training procedures. Upon acceptance of the wigwag concept by the Army and funding approval by Congress in 1860, Myer received the appointment of Signal Officer to supervise the manning, equipping and training of soldiers in wigwag operations. When the Civil War began in April 1861, a temporary Signal School was established at Fort Monroe in June to quickly train soldiers of all branches in the skills of visual signaling.

As the war progressed, the Army established a permanent Signal School at Red Hill, Georgetown, DC in August 1861. There, officers and men detailed

A Brief History of the US Army Signal School

from other branches were trained by the small cadre of acting signal officers, who themselves had been recently trained. The instructional methodology was for collective training of "sets" or teams, of officers and flagmen, with two officers and four enlisted men to a team. Signal training focused on technical and tactical skills, including sending, reading, and encrypting wigwag messages, horsemanship, and soldier skills to survive on the battlefield. After the Civil War, Myer struggled to maintain the existence of the Signal Corps when political leaders questioned the need for the branch in peacetime. The Signal School at Georgetown closed and, for a brief time, training was conducted at the Signal Office in Washington.

In September 1868, Myer moved the Signal School to Fort Greble, an abandoned fort in southeastern Washington DC; but this proved unsatisfactory because of a lack of space for pole line and telegraph train maneuvers. In September 1869, Myer moved the school to Fort Whipple on the grounds of Arlington plantation overlooking the Potomac River because it had ample maneuver space in the surrounding countryside. The school curriculum remained the same as in wartime until 1870,



*A recruiting ad for the Signal Corps circa 1920.
Signal History Office Collection*

when the Signal Corps added meteorological training. On August 24, 1880, shortly after his promotion to brigadier general, Myer died. In 1881, the Army renamed Fort Whipple to Fort Myer to honor the legacy of one of the US Army's most distinguished innovators.

Myer's successor was Brig. Gen. William B. Hazen, a straight talking, outspoken officer. Unfortunately, Hazen's controversial nature often resulted in fractured relationships with peers and superiors. A long-standing dispute between Hazen and Lt. Gen. Philip H. Sheridan may have led Sheridan, the commanding General of the Army in 1885, to discontinue the Signal School at Fort Myer. Instead of instruction at a central location by skilled Signal Soldiers, technical signal training was relegated to unit commanders at their home stations, which proved to be less than successful. Although there was no official Signal School from 1885 to 1904, signaling did become part of the curriculum at other Army schools.

The lack of a Signal School caught the Army short at out-

break of the Spanish-American War in 1898. To fill the urgent need for men the Volunteer Signal Corps was created to bring in skilled technicians, such as telegraphers, linemen and telephone workers, from commercial industry. Signal training returned to its roots at Fort Myer, which once again became the home of the Signal School in 1899 where recruits learned the fundamentals of telegraphy, telephony, line repair, and visual signaling.

As part of the reforms instituted by Secretary of War Elihu Root in 1903, the Army launched efforts to modernize, standardize and expand its educational system. Along with the establishment of the Army War College in 1901, the War Department created a tier of service schools to include specific branch schools. As part of this new system, the Army established the Signal School at Fort Leavenworth, Kansas June 27, 1904 under provisions of War Department General Order 115.

Three departments were responsible for the curriculum. The department of signaling was concerned with optical, acoustical, and electrical signaling. The department of signal engineering included electrical and mechanical, as well as aeronautics, photography and topography. Finally, the department of Spanish rounded out the one-year course of study. The following year, War Department General Order 140, August 19, 1905 specified the school name as the United States Signal School, and the course of study included French and German offered as additional languages. By 1913, the school expanded to include enlisted men.

On April 6, 1917, the United States declared war on Germany. Because Fort Leavenworth could not accommodate the influx of new students, so additional facilities had to be established. One of these was Camp Alfred Vail in New Jer-



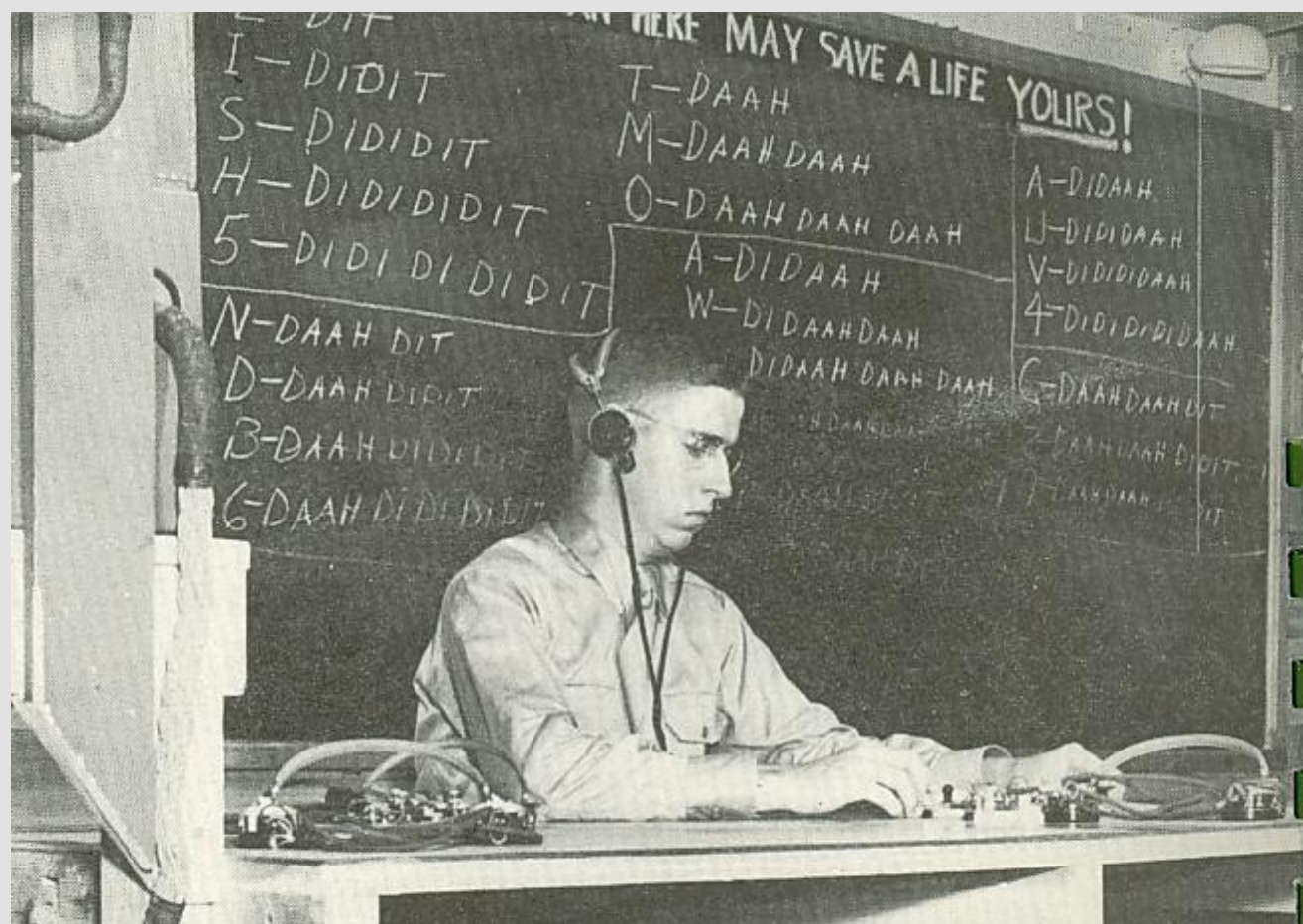
Officer Quarters at the Georgetown Signal Camp of Instruction circa 1865.

Signal History Office Collection

sey where the signal curriculum focused on telegraph, telephone and radio operation. At the time, there was a pressing need for telegraph operators in France, so an intensive six-week training course was initiated. Most training focused on operations of two basic signal units: the Field Signal Battalion and the Telegraph Battalion. The Field Signal Battalions operated communications within front line divisions; the Telegraph Battalions maintained communications above division level. Wire, which carried both telephone and telegraph signals, was the basis of most communication training. In 1918, all signal-training activities at Fort Leavenworth were moved to a new radio school at Camp George G. Meade in Maryland. After the war, the Army decided to consolidate all signal training at Camp Vail, later re-named as Fort Monmouth in 1925.

War once again burst on to the United States December 7, 1941. In response to the world-wide conflict and advancing technology, a myriad of signal units were created. Aircraft-warning battalions and radio-

intelligence companies were just a couple of these specialized signal units. Joint Assault Signal Companies (JASCOs) were developed to meet the unique communication needs of joint amphibious operations and included Army, Navy, Marine and Army Air Force personnel. As the war progressed, operational requirements became so pressing that students were sometimes taken out of schools to provide fillers for deploying signal companies and battalions. During World War II, Fort Monmouth hosted the Eastern Signal Corps Training Center. The installation had space for 1,559 officers and 19,786 enlisted personnel undergoing training. The Training Center consisted of the Eastern Signal Corps Schools for enlisted and officers. In addition, this was the home of the Pigeon



*Signal Soldier learning code at Camp Crowder.
Signal History Office Collection*

Breeding and Training Center. One of the largest training activities was the Officer Candidate School, which graduated 21,033 new Signal Corps second lieutenants from 1941 to 1946.

After WWII, an additional Signal Corps Training Center was established at Camp Gordon, Georgia in 1948. This school, in addition to the main school at Ft. Monmouth, provided communications training during the height of the Cold War in the 1950s. In June 1962, the activities of the Signal Corps Training Center were reorganized into the U.S. Army Southeastern Signal School. In March 1967, the Army began to study the feasibility of consolidating all Signal training into one location and decided that Fort Gordon was ideal due to its size and climate. It would not be until 1974 when new facilities were completed that all signal training was relocated from Fort Monmouth to Fort Gordon. The new organization was designated the US Army Signal Center and Fort Gordon October 1, 1974 and established the largest communications-electronics training facility in the world.

During the mid-1980s, the US Army struggled to cope with potential warfare in Europe and major developments in concepts, doctrine, weapons and training drove the whole Army toward that goal. Then an entirely new aspect of communications technology made a significant impact on the Signal School. On June 16, 1987, the TRADOC commander directed the Army's Computer Science School at Fort Ben Harrison relocate to Fort Gordon. He made the decision to support the Army directive that the Signal Corps was to be the proponent for the Army Information Mission Area (IMA). Since the desktop computer was expanding beyond its original concept as a more effective typewriter into a device able to communicate with other computers via a network, the Army sought to leverage the development by co-locating automation and communications into an integrated training environment.

Courses conducted at the Signal School exposed students to Tier I – III architecture, from micro, mini and mainframe computers as well as local area networks (LAN), data communications, and UNIX. Artificial intelligence (AI) and automation data processing were also added to the curriculum. The goal was to provide Signal soldiers with technical skills to operate the IMA arena and keep pace with accelerating technology. On October 28, 1988, the Computer Science School officially activated as part of the US Army Signal Center.



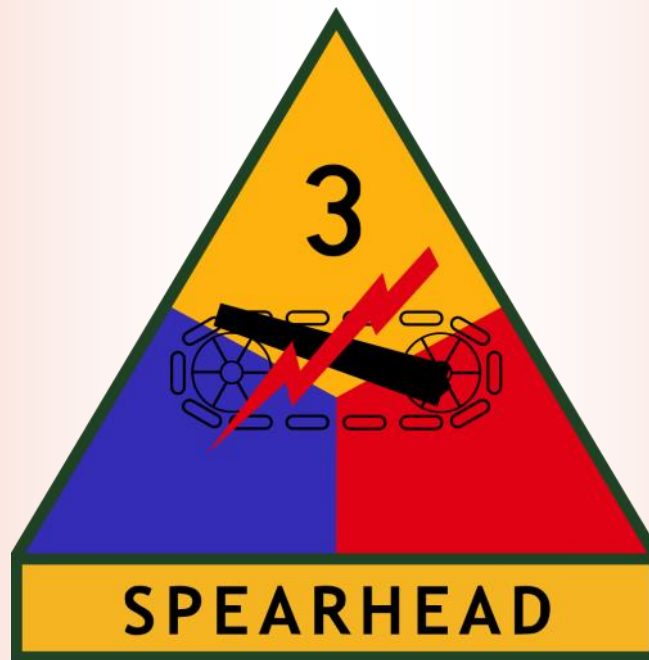
Today, the Signal School's mission is to drive the evolution of doctrine, organization, training, material, education, and leader development to provide the Army with multi-faceted, multi-disciplined Signal Soldiers to support Large Scale Combat Operations.
Signal History Office Collection

Throughout the early 21st century, the Signal School has carried out the ever-changing mission to train and educate soldiers in the science of communications. As the organization evolved from the US Army Signal Center to the US Army Signal Center of Excellence, and finally the US Army Cyber Center of Excellence in 2014, the Signal School continued to function much as it had since the Civil War. Today the identity and heritage of the Signal School continues in the current organization along with the Signal Corps Regiment at Fort Gordon.

143RD SIGNAL BATTALION

3RD ARMoured DIVISION

REUNION



October 10, 2020

Army Community Service Family
Outreach Center
33512 Rice Drive
Fort Gordon, Georgia 30905

4 PM to 8 PM

To RSVP or for more information, please contact
Command Sgt. Maj. (ret.)
Clark Dimery, Sr.
at (706)-267-0496

In the next



ARMY



COMMUNICATOR...

Signal Around the World

